



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,011	04/07/2006	Graeme Moad	PIP15-22778/CGM 522/A/PCT	1662
324 7590 11/23/2009				
JoAnn Villamizar				
Ciba Corporation/Patent Department				
540 White Plains Road				
P.O. Box 2005				
Tarrytown, NY 10591				
EXAMINER				
LET, RIP A				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
11/23/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

andrea.dececchis@ciba.com
deborah.pinori@ciba.com
sonny.nkansa@basf.com

Office Action Summary

Application No.

10/533,011

Applicant(s)

MOAD ET AL.

Examiner

RIP A. LEE

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 4, 9-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 9-18 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date 10-20-2009
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Art Unit: 1796

DETAILED ACTION

This office action follows a response filed on October 20, 2009. Claims 1 and 17 were amended to exclude sorbitan ester as the non-ionic surfactant component. Claim 8 was canceled. Claims 1, 3, 4, 9-18, and 20 are pending.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 3, 4, 9-14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (WO 99/07790) in view of Godlewski *et al.* (U.S. 4,481,322).

Fischer relates to preparation of polymer-clay nanocomposite material wherein the clay filler is dispersed with aid of a block copolymer rather than use of conventional onium salts (page 2, lines 9-21). The block copolymer comprises a structural unit compatible with clay (especially preferred is ethylene oxide; see page 6, lines 7) and a structural unit compatible with the polymer matrix (preferred are polymethyl methacrylate and polysiloxane; see page 7, line 5). While Fischer does not elucidate the substituents on the polysiloxane, one having ordinary skill in the art would have found it obvious from the polydimethylsiloxane-polyethylene oxide block copolymers in Godlewski *et al.* (see col. 9, line 55), that Fischer would contemplate use of polydimethylsiloxane as the polysiloxane block. Accordingly, one of ordinary skill in the art would have found it obvious to practice the invention of Fischer using block copolymers such as polydimethylsiloxane-polyethylene oxide or polymethyl methacrylate-polyethylene oxide based on the disclosure of Fischer and Godlewski *et al.* The person of ordinary skill would have been especially motivated to use polydimethylsiloxane-polyethylene because Godlewski *et al.* discloses use of this polymer as compatibilizer for preparing polyolefin-phylllosilicate (mica) compositions.

Art Unit: 1796

Fischer discloses use of phyllosilicates on page 4, lines 5-13. The weight ratio of block copolymer to clay lies in the range of 0.05/1 to 6/1, and the weight ratio of clay to polymer matrix lies in the range of 1:50 to 1.2:1 (page 7, lines 18 and 20). One gleans from the working examples that compositions contain about 5 wt % of filler (page 10, line 25). Working examples do not show compositions containing filler and block copolymer in the claimed quantity, however, one of ordinary skill in the art would have found it obvious to make such a composition because the claimed ratio is well within the range taught in the prior art. Moreover, one of ordinary skill in the art would have found it obvious to optimize the quantity of block copolymer in order to obtain the appropriate level of dispersion of filler in the polymeric matrix. Polymer material used as the polymeric matrix are polyolefin such as polyethylene and polypropylene (page 5, line 4). Use of polyolefin is especially preferred because their properties show substantial improvement due to presence of clay (page 5, lines 12-15). The person of ordinary skill in the art would have found it obvious to make polyolefin nanocomposite material based on the disclosure of Fischer. Preparation of polyolefin nanocomposite material is especially compelling in view of Fischer and Godlewski *et al.* because the latter teaches that block copolymer-filler as described in Fischer is a useful reinforcing agent for polyolefin.

Molded articles comprising inventive nanocomposite materials are prepared by melt mixing in an extruder at temperatures up to 150 °C (page 8, lines 23-26). Fischer does not describe further additives, however, it would have been obvious to the person of ordinary skill in the art to incorporate a stabilizer package, as taught in Godlewski *et al.* (col. 10, line 2) in order to prolong shelf life of the molded article.

3. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Godlewski *et al.*, and further in view of Mehta *et al.* (U.S. 6,844,389).

Fischer is silent with respect to compounding from a concentrate or masterbatch. However, at the time the invention was made, use of concentrates, or masterbatches, was known to those having skill in the extrusion art. For instance, Mehta *et al.* discloses preparing polyolefin-clay nanocomposites in which the clay filler is let down into the polymer matrix by use of a concentrate. As appreciated in the art, use of concentrates allows for more effective

Art Unit: 1796

incorporation of compounding ingredients into a polymer matrix, and it minimizes the number of materials that must be stored and handled by processors. Typical concentrates contain 20-60 wt % of clay and other processing additives (col. 7, line 61 - col. 8, line 26). The disclosure of Mehta *et al.* would have suggested to one having skill in the art that compositions of Fischer may be prepared more conveniently using the masterbatch technique, and therefore, it would have been obvious to one having ordinary skill in the art to make compositions of Fischer via a masterbatch, as prescribed in Mehta *et al.* Since this process is well-established in the art, one having ordinary skill in the art would have expected such a combination to work with a reasonable expectation of success.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Godlewski *et al.*, and further in view of Inoue *et al.* (U.S. 4,338,228).

Fischer does not teach use of nucleating agent. At the time of instant invention, it was well-established in the art to use nucleating agent to promote crystallization of polyolefins from the melt. Inoue *et al.* teaches addition of 0.04 to 3 parts by weight (col. 3, line 54) to achieve this goal. The person having ordinary skill in the art would have found it obvious to use nucleating agent for preparing polyolefin nanocomposite materials of Fischer in order to enhance crystallization of polyolefin compositions.

Art Unit: 1796

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1, 3, 4, 9-18, and 20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18, 20, and 21 of copending Application No. 10/574,264. Although the conflicting claims are not identical, they are not patentably distinct from each other. Claims of the copending application are drawn to a composition comprising synthetic polymer (polyolefin), filler (phyllosilicate), and dispersing agent wherein filler is present in an amount of 0.1-40 wt % and dispersing agent is present in an amount of 0.1 to 20 wt %. From these ranges, one observes that the ratio of dispersing agent to filler lies in the range of 1/1 to 1/2. The dispersing agent is a block (acrylic) copolymer that can be prepared by free radical polymerization. One finds in the specification that these are polysiloxane-polyoxyalkylene block copolymer (page 19, line 13), a polymath-acrylate/polyethylene oxide block copolymer (page 19, line 23), poly(methylmethacrylate-bisethylene oxide) (page 20, line 2), and PMMA-grad-PEGMEA block copolymer (page 42, table 3).

Art Unit: 1796

Applicant's attention is drawn to MPEP § 804 where it is disclosed that "the specification can always be used as a dictionary to learn the meaning of a term in a patent claim." *In re Boylan*, 392 F. 2d 1017, 157 USPQ 370 (CCPA 1986). Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. *In re Vogel*, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970).

Claims do not recite specifically that clay is not organically modified clay, however, it is clear from the disclosure that clay is unmodified (page 9, line 12). Copending claims are also drawn to incorporation of further additives such as nucleating agent, preparation of the composition by melt mixing, and use of masterbatch methodology.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. Claims 1, 3, 4, 9-18, and 20 are directed to an invention not patentably distinct from claims 1-18, 20, and 21 of commonly assigned Application No. 10/574,264 for the reasons elucidated in previous paragraph 6.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned Application No. 10/574,264, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned *at the time the invention in this application was made*, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Art Unit: 1796

Response to Arguments

8. Rejections set forth in paragraphs 2-11 of the previous office action dated February 19, 2009 have been overcome by amendment.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1796

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James J. Seidleck/
Supervisory Patent Examiner, Art Unit 1796

/Rip A. Lee/
Examiner, Art Unit 1796

November 17, 2009